

Preparedness in Routine Prevention: Levers for the Preventive Medicine Specialty in the Healthcare Context

Yuri T. Jadotte, MD, PhD, MPH,^{1,2,3} Samar Muzaffar, MD, MPH, FACPM,³
Stephanie Zaza, MD, MPH, FACPM³

PREVENTIVE MEDICINE AND THE PRINCIPLES OF PREPAREDNESS IN ROUTINE PREVENTION

Prevention has had unparalleled success in reducing population mortality and morbidity.^{1,2} Yet the preventive medicine (PM) specialty struggles to achieve sustainable funding and lasting recognition.³ Both novel and ongoing population health crises (e.g., COVID-19 and the obesity epidemic, respectively) reveal multi-level prevention gaps that leave individuals and populations vulnerable.⁴ Combined with the persistently disease-centric approach of health care,³ the value of prevention remains unrealized. There is a need for a narrative that allows prevention to thrive. Recognizing this need, the American College of Preventive Medicine (ACPM), via a survey of PM physician experts working on the “Power of Prevention” campaign, identified the concept of preparedness as a common thread to center prevention as a core component of all health system contexts (i.e., public health, health care, and society at large). The historic environmental health disasters of the past, and the federal laws they consequently prompted,⁵ have solidified public health emergency preparedness in the public sphere.⁶ Preparedness is colloquially understood as being required for all life events, but scientifically, it is “the capability of healthcare systems, communities, and individuals, to prevent, respond to, and recover from health emergencies.”⁷

This paper recommends approaches to sustainably implement routine prevention, as compared to prevention for public health emergencies, with the principles of preparedness as cornerstones and PM providing leadership, strategic input and operational expertise. [Table 1](#) summarizes the principles of public health preparedness and how they may be translated to optimize foundational and systematic preparedness in routine prevention within healthcare systems. The authors propose 5 key levers available to the PM specialty to streamline preparedness in routine prevention within healthcare systems:

healthcare financing, employer partnerships, lifestyle and precision medicine, and medical education at the learner and practitioner levels. [Figure 1](#) illustrates these levers.

LEVER 1: REFINANCING HEALTHCARE

No greater driver explains the lack of preparedness in routine prevention and the low traction of prevention at the policymaking table than the financing of healthcare. Governments focus on budget costs and savings, disregarding long-term outcomes and benefits. This devalues and limits sustained and systematic investment in routine prevention. The COVID-19 pandemic demonstrates how lack of attention to preparedness in routine prevention can take an economic and human toll. To engage stakeholders in financing prevention, it is critical to first recognize which approaches move the needle from “pay for action” to “pay for outcomes.” Approaches that emphasize prospective, value-driven, population-based, risk-adjusted payment reform should be encouraged.⁸ For example, states are already pushing payers to develop value-based contracts, via initiatives that target illness metrics and emphasize continuity and follow-up by the provider or care management infrastructure. Uniform standards for practice and electronic medical records, development of state-based all-payer databases and analytics, and expansion of integrated health exchanges would further advance this prevention lever. Advocacy for federal and state policies that prioritize

From the ¹Department of Family, Population and Preventive Medicine, and Residency Program in Public Health and General Preventive Medicine, Renaissance School of Medicine at Stony Brook University, Stony Brook, New York; ²The Northeast Institute for Evidence Synthesis and Translation, School of Nursing, Rutgers University, Newark, New Jersey; and ³The American College of Preventive Medicine, Washington, District of Columbia

Address correspondence to: Yuri T. Jadotte, MD, PhD, MPH, Renaissance School of Medicine at Stony Brook University, Health Sciences Center, Level 3 Suite 086, Stony Brook NY 11794. E-mail: yuri.jadotte@stonybrookmedicine.edu.

0749-3797/\$36.00

<https://doi.org/10.1016/j.amepre.2021.12.007>

Table 1. Key Elements of Public Health Emergency Preparedness and Principles of Preparedness in Routine Prevention

Categories of preparedness ^a	Key elements of public health emergency preparedness ^a	Key elements of healthcare system preparedness in routine prevention
Overall definition	A prepared community is one that develops, maintains, and uses a realistic preparedness plan, integrated with routine practices, having the components below.	A prepared healthcare system is one that develops, maintains, and uses a realistic, foundational and systematic plan for routine prevention, integrated into all systems of care, having the components below.
Category 1: Preplanned and coordinated rapid-response capability	<i>Health risk assessment.</i> Identify the hazards and vulnerabilities (e.g., community health assessment, populations at risk, high-hazard industries, physical structures of importance) that will form the basis of planning.	Community-based risk assessments of factors that increase disease prevalence in a specific patient catchment area must be undertaken by healthcare systems, informed by evidence and guided by preventive medicine experts.
	<i>Legal climate.</i> Identify and address issues concerning legal authority and liability barriers to effectively monitor, prevent, or respond to a public health emergency.	Understanding the legal climate and barriers to effectively and efficiently implementing routine preventive care in a foundational and systematic way is paramount to addressing ongoing population health crises, such as the epidemics of obesity, diabetes, and substance use disorder.
	<i>Roles and responsibilities.</i> Clearly define, assign, and test responsibilities in all sectors, at all levels of government, and with all individuals and ensure each group's integration.	While team-based care is increasingly normative in healthcare, there is a need to clearly define, assign, and test responsibilities for optimizing routine prevention within healthcare systems, and to ensure it is integrated both within (e.g., across professions, disciplines and service lines) and without (e.g., alongside public health systems).
	<i>Incident Command System.</i> Develop, test, and improve decision-making and response capability using an integrated Incident Command System (ICS) at all response levels.	Developing, testing and improving decision-making and ongoing response capability for optimizing routine prevention is essential. One approach may be to assure that preventive medicine has a leadership role in all population health improvement initiatives within healthcare systems.
	<i>Public engagement.</i> Educate, engage, and mobilize the public to be full and active participants in public health emergency preparedness.	Educating, engaging and mobilizing the public to be full participants in routine prevention regarding their own choices and behaviors, including shared decision-making in preventive services and care decisions, and regarding systems outside of health care (e.g., schools, criminal justice) is essential.
	<i>Epidemiology functions.</i> Maintain and improve the systems to monitor, detect, and investigate potential hazards, particularly those that are environmental, radiological, toxic, or infectious.	Maintaining and improving systems to monitor, detect and investigate routine life hazards (e.g., lifestyle and injury related factors) must be regularly undertaken.
	<i>Laboratory functions.</i> Maintain and improve the systems to test for potential hazards, particularly those that are environmental, radiological, toxic, or infectious.	Maintaining and improving systems to identify potential hazards beyond mere emergencies (e.g., chronic lack of care coordination, inadequate patient safety infrastructure, non-patient friendly clinical care administrative practices) are key to optimizing health care.
	<i>Countermeasures and mitigation strategies.</i> Develop, test, and improve community mitigation strategies (e.g., isolation and quarantine, social distancing) and countermeasure distribution strategies when appropriate.	Countermeasures and mitigation strategies against the neglect of routine prevention must be systematically developed and foundationally embedded into all healthcare systems (e.g., assuring that healthcare financing favors prevention over treatment, and financing interventions to reduce barriers to care).
	<i>Mass health care.</i> Develop, test, and improve the capability to provide mass health care services.	Approaches for developing, testing and improving mass capability to provide routine preventive services should be pursued (e.g., seek full expansion of Medicaid across all states; implement innovative solutions that optimize routine prevention, such as telehealth and shared medical visits).
	<i>Public information and communication.</i> Develop, practice, and improve the capability to rapidly provide accurate and credible information to the public in culturally appropriate ways.	Systems that facilitate the delivery of accurate and credible information to the public in culturally appropriate ways for routine prevention should be expanded (e.g., additional communication campaigns for routine vaccines and screenings, and for lifestyle-based health programs).
	<i>Robust supply chain.</i> Identify critical resources for public health emergency response and practice and improve the ability to deliver these resources throughout the supply chain.	Identifying all critical resources needed to fully implement routine prevention, and practicing and improving the ability of healthcare systems to deliver these interventions is paramount (e.g., scaling up successful evidence-based prevention demonstration projects when feasible).
Category 2: Expert and fully staffed workforce	<i>Operations-ready workers and volunteers.</i> Develop and maintain a public health and healthcare workforce that has the skills and capabilities to perform optimally in a public health emergency.	Expanding and securing training funding support for a robust preventive medicine physician workforce will ensure that the healthcare system can optimally and regularly perform all routine preventive interventions.
	<i>Leadership.</i> Train, recruit, and develop public health leaders (e.g., to mobilize resources, engage the community, develop interagency relationships, communicate with the public).	Training, recruiting and developing preventive medicine leaders embedded within all healthcare systems will assure the achievement and long-term sustainability of preparedness in routine prevention.

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Table 1. Key Elements of Public Health Emergency Preparedness and Principles of Preparedness in Routine Prevention (continued)

Categories of preparedness ^a	Key elements of public health emergency preparedness ^a	Key elements of healthcare system preparedness in routine prevention
Category 3: Accountability and quality improvement	<i>Testing operational capabilities.</i> Practice, review, report on, and improve public health emergency preparedness by regularly using real public health events, supplemented with drills and exercises when appropriate.	Practical and regular demonstrations of how to implement routine preventive services will improve the preparedness of healthcare systems to deal with ongoing population health crises that are amenable to prevention.
	<i>Performance management.</i> Implement a performance management and accountability system.	Systematic performance and quality improvement infrastructures and evaluation methods must be aligned to address all aspects of routine prevention.
	<i>Financial tracking.</i> Develop, test, and improve charge capture, accounting, and other financial systems to track resources and ensure adequate and timely reimbursement.	Developing methods to track the allocation of resources for and to ensure adequate and timely reimbursement for preventive services is a cornerstone of preparedness in routine prevention.

^aAs defined in: Nelson C, Lurie N, Wasserman J, Zakowski S. Conceptualizing and defining public health emergency preparedness. *Am J Public Health.* 2007;97(suppl 1):S9–S11. <https://doi.org/10.2105/ajph.2007.114496>.

equitable and longer-term perspectives on population health outcomes is paramount to fully realize the benefits of routine prevention at scale.

LEVER 2: PARTNERING WITH EMPLOYERS

Another major driver of preparedness in routine prevention is the workplace. The business sector already understands the necessity of aligning human capital health, safety and performance with sustainability, environmental stewardship and “good business”. Employers have already propelled many innovations to improve health, enhance safety, and reduce medical errors and costs. Government decisions regarding healthcare financing, including the provision of tax subsidies for employers

who sponsor healthcare insurance plans, maintain employer-based insurance as the predominant source of healthcare coverage in America.⁹ As such, employers are necessary partners in driving health through innovative financing mechanisms and preventive care delivery models. Preventive medicine must establish relationships with business coalitions and engage in ongoing discussions about changing expectations to focus on health, not costs, and increasing value, not volume.¹⁰ This work would be facilitated by working in partnership with the federal government to simplify payment systems and coding. Success in this dual engagement and policy task would encourage collaboration with employers to facilitate the transformation of healthcare to create value and sustain preparedness in routine prevention. Partnerships with leading large employers deploying onsite clinics should be expanded to increase opportunities for better incorporating behavioral support and PM into clinic operations.

LEVER 3: OPTIMIZING LIFESTYLE AND PRECISION MEDICINE

Lifestyle medicine (LM) now has a solid evidence base¹¹ and known implementation methods.^{12,13} Precision medicine, the tailoring of prevention, diagnosis, and treatment via the capture of the totality of health data (e.g., genomics, epigenomics)¹⁴ to address the specific needs of individuals and communities, has also made significant advancements. These disciplines could help optimize preparedness in routine prevention, but they cannot flourish outside of transformative value-based prospective payment models. Ongoing engagement with and systematic preparation of PM physicians for LM¹⁵ and precision medicine is strongly recommended in preparation for the opportunities for better prevention that will arise when these transformed payment models are finally the norm. This includes mastering the

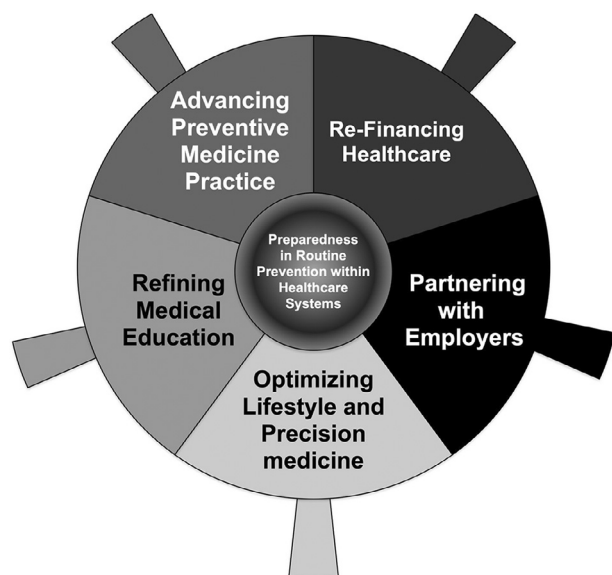


Figure 1. Levers for the preventive medicine specialty to achieve preparedness in routine prevention within healthcare systems.

evidence base to apply medical and public health interventions that modulate epigenetics, the inheritance of health outcomes and phenotypes without changing one's genetic sequence.¹⁶ Approaches that encourage a cultural shift towards LM among the general population should be sought (e.g., partnership with communities and the media to encourage healthy choices and with government to facilitate healthy living environments, and PM physician modeling of healthy behaviors). Assurance of the PM workforce's competence in the practical applications of these fields for routine prevention,⁴ and training for PM physicians on methods for their integration into clinical preventive service delivery¹⁷ will be essential.

LEVER 4: REFINING MEDICAL EDUCATION

Establishing preparedness as a foundation for prevention depends on medical education. At the undergraduate level, better prevention education has long been advocated for but remains unfulfilled.^{18,19} To address this issue, preventive medicine, with emphasis on lifestyle medicine, should be systemically and seamlessly integrated into the medical school curriculum, but remain interesting enough to be a visible and desirable specialty. Ongoing economic alignment to value-based reimbursement will eventually raise appreciation for the core foci of PM.⁴ However, the early exposure of medical students and residents to these foci, via a mandatory PM clerkship and an off-the-shelf didactic introduction to PM would accelerate this curricular integration.

Residency training in PM should emphasize practice-ready methods for the integration of medicine and public health,²⁰ a task that remains unfilled in clinical practice and public health policy settings that exclude PM physicians. Re-framing PM training to incorporate preparedness in routine prevention as a core theme for all clinical and population-based services would facilitate success in this area, broaden the specialty's impact on the culture of health, enhance recognition of the PM specialty as the bridge between public health and medicine, and encourage healthcare systems to employ PM physicians. Engagement with business and other community leaders should be sought to further align PM training to physician workforce needs and opportunities.²¹ Sustainable funding for PM training is essential to realizing this approach, including permanent governmental agency (e.g., CDC, HRSA, state health department) and legislative funding streams, and non-traditional governmental and philanthropic funding sources. To better elicit support from these stakeholders, PM residencies could highlight preparedness in their missions, packaged as a community capacity-building model for long-term

preparedness that transcends pandemics and periodic public health emergencies and target ongoing population health crises.

LEVER 5: ADVANCING PREVENTIVE MEDICINE PRACTICE

Given the current breadth of careers of PM physicians, which is a source of strength for those in practice but trepidation for those in training, clear career pathway models for PM physicians should be established and expanded. Although this is a challenging task in the predominantly fee-for-service healthcare context, the COVID-19 pandemic provides a singular opportunity to highlight the true value of PM physicians, by working with employers to educate them on the PM specialty and its unique skill set, lobbying licensing boards to ensure PM credentials are a recognized resource for healthcare systems,²² and establishing a catalog of experienced PM physician leaders who can facilitate connections with and the hiring of junior PM colleagues. Core functions and essential services for PM physicians that delineate their specific roles within healthcare systems,⁴ and well-defined and practical clinical and population-based preventive services¹⁷ would cement PM's place in delivering health care services and routinize prevention in healthcare systems. These preventive services should demonstrate that PM physicians possess technical skills well beyond the basic biostatistics and epidemiology widely available from other disciplines. These could include advanced research skills and expert clinical acumen in lifestyle medicine, integrative medicine, motivational interviewing and brief action planning, combined with theory-based and application-focused preparation in the interdisciplinary sciences of human evolution and human ecology.⁴ Further testing and validation of these and other skills and knowledge bases for routine prevention is warranted before their widespread implementation as standard PM practice. Additionally, PM physicians need stable and welcoming employment venues and competitive demand for their skills. Partnership with physician leaders and champions who acknowledge the value of PM specialists, and a clear message around PM skills and the health successes stemming from them, will be critical. The specialty may need to embrace novel ideas regarding its identity and be willing to question the status quo of medicine and public health.

CONCLUSION

Preparedness can help routine prevention transcend public health emergencies to also address ongoing population health crises. Refinancing healthcare, partnering

with employers, adopting lifestyle and precision medicine, refining medical education, and advancing PM practice can solidify preparedness in routine prevention within healthcare systems.

ACKNOWLEDGMENTS

We are grateful for the support of the following individuals for their contributions to this paper: Donna Grande, Drew Wallace and Melissa Ferrari from the American College of Preventive Medicine (ACPM) for their support coordinating the collaborative writing process for this paper and Drs. Michael Parkinson and Edward Fess for their active engagement in the ACPM Power of Prevention survey panel focusing on preparedness within healthcare systems. We also thank Dr. Robert Wallace, Senior Associate Editor, and Ms. Jillian Morgan, Managing Editor, from the American Journal of Preventive Medicine for their handling of this manuscript. The content of this publication is the sole responsibility of the authors and does not reflect the official views or policies of the American Journal of Preventive Medicine, the American College of Preventive Medicine, or any of the institutions listed in the author affiliation section.

The authors have no financial or other conflicts of interest to disclose.

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